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EXAMINER
PRABHAKHER, PRITHAM DAVID

ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/647,042	OKUBO, TOSHIYUKI	
	Examiner	Art Unit	
	Pritham Prabhakher	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/13/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.
>
> Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.
>
> ... a signal does not fall within one of the four statutory classes of Sec. 101.
>
> ... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 30 and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 30 and 31 are drawn to functional descriptive material recorded on a storage medium. Normally, the claims would be statutory. However, the specification, at page 32, lines 25-27, defines the claimed computer readable medium as encompassing statutory media such as a "ROM", "hard drive", optical drive", memory card etc, as well as **non-statutory** subject matter such as a "LAN" and "WAN" which are not concrete storage mediums and are present for supplying a signal of program codes.

The "LAN" and "WAN" are not concrete storage mediums as mentioned above, and a signal embodying functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of 35 U.S.C. 101. Rather, signal is a form of energy, in the absence of any physical structure or tangible material.

Because the full scope of the claim as properly read in light of the disclosure encompasses non-statutory subject matter, the claim as a whole is non-statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitajima (US Patent No.: 5808681).

*In regard to **Claim 1**, Kitajima teaches of a method of controlling an image sensing apparatus, which has an image sensor **(Column 4, Lines 44-46)**, a flash light used to illuminate an object with light (Strobe 10 in **Figure 1**), and an image sensing instruction unit (the CPU 12 from **Figure 1**), comprising:*

sensing a first image while causing the flash light to emit light in response to an image sensing designation by the image sensing instruction unit (The CPU 12 (image sensing instruction unit) causes a strobe 10 to emit a flash of light for performing a first exposure in response to an object area to be photographed, ***Column 6, Lines 14 et seq.)****;*

calculating a color temperature for processing the first image using at least color temperature information of the first image (Color temperature is used for processing the first image (image captured in first exposure) by the data processing section 6. The data processing section 6 corrects the color gain by the AWB control value for the strobe light for the object area (image) at which a strobe light is used, ***Column 6, Lines 14 to 63****. The gain for each color signal is controlled according to the color temperature information,* ***Column 1, Lines 51-59)****.*

Regarding ***Claim 2****, Kitajima teaches of the method according to claim 1, further comprising determining whether or not to sense an image using the flash light (The CPU 12 decides (instructs) whether to sense an image using the strobe light (flash light) or not to sense an image using the strobe light (not emit light from strobe),* ***Column 6, Lines 24-32)****.*

In regard to ***Claim 3****, Kitajima teaches of the method according to claim 2, further comprising storing a second image obtained immediately before the emission of the flash light in a storage device (The CPU 12 instructs a performance of a second exposure (second capturing of image) when there is no emission being performed by*

the flashlight (strobe). The image data is stored in the frame memory 5, ***Column 6, Lines 25-33)****.*

wherein in said calculating of the color temperature, a color temperature of the first image (image where strobe is used) is calculated using the first and second images (The calculation of the color temperature (AWB control value) of the first image (image where strobe is used) is calculated using the first and second images because the AWB control value is selected according to the ratio of the image data obtained in the first exposure versus the image data obtained during the second exposure (a/b). The ratio of the image with a strobe light and without a strobe light will yield the result of the color temperature of the first image which was captured using a strobe light, ***Column 6, Lines 46-63)****.*

With regard to ***Claim 4****, Kitajima teaches of the method according to claim 3, wherein the second image is an image obtained before the emission of the flashlight in response to the image sensing designation by the image sensing instruction unit (The second image is an image obtained without the emission of a strobe (flashlight),* ***Column 6, Lines 30-33*** *in response to an image sensing designation (area to be imaged) by the image sensing instruction unit (CPU 12). The CPU 12 determines how much light/no light needs to be emitted onto an object/area to be photographed,* ***Column 16, Lines 12 et seq.)***

Regarding ***Claim 5****, Kitajima teaches of the method according to claim 3, wherein the second image is an image obtained before the emission of the flash light when it is determined to sense an image using the flash light (The second image (image data*

captured during the second exposure) is an image obtained when no strobe light is used. A determination to sense an image using a flash light was already made during the first exposure, ***Column 6, Lines 24-33)****.*

With regard to ***Claim 6****, Kitajima teaches of the method according to claim 3, wherein said calculating of the color temperature includes detecting a color temperature of an external light using the second image (When no flash is used to detect a second image, the color measuring sensor 9 from Figure 1 detects a color temperature of the external light (when no strobe light is present, it is inherent that the color measuring sensor 9 detects the color temperature of external light))****.***

In regard to ***Claim 7****, Kitajima teaches of the method according to claim 3, wherein said calculating of the color temperature includes detecting a ratio of brightness between the flash light and external light using the second image (The ratio of image data (a/b) obtained when the strobe light (flash light) is emitted (a) to the image data obtained when the strobe light is not emitted (external light) (b) is used to calculate the color temperature value (AWB control value),* ***Column 6, Lines 46-63).***

With regard to ***Claim 8****, Kitajima teaches of the method according to claim 1, further comprising applying white balance correction corresponding to the calculated color temperature to the first image (AWB (Auto White Balance) control value is obtained on the basis of the color temperature,* ***Column 1, Lines 60 to 68****. The AWB control value which is obtained on the basis of the ratio comparison, is used to correct the color gain of the first by applying AWB processing,* ***Column 6, Lines 46-64).***

In regard to ***Claim 9,*** *Kitajima teaches of the method according to claim 1, wherein said calculating of the color temperature includes calculating a color temperature of the flash light using the first image (The first image is taken into account in the ratio (a/b) which is used to calculate the color temperature of the strobe,* ***Column 6, Lines 30-64)****.*

With regard to ***Claim 10****, Kitajima teaches of the method according to claim 1, wherein said calculating of the color temperature includes calculating a ratio of brightness between the flash light and an external light using the first image (The CPU 12 judges (calculates) a ratio (a/b) of brightness between the flashlight (when a/b>1, the pixel is deemed to be in an area where the strobe light fully arrives) and an external light (when a/b is approximately equal to 1, the pixel is in an area at which the strobe light does not arrive). The first image (a) is used accounted for in the calculation,* ***Column 6, Lines 46-55)****.*

Regarding ***Claim 11****, Kitajima teaches of the method according to claim 9, wherein said calculation of the color temperature further comprises:*

detecting a color temperature of external light using the second image (b in the ratio a/b accounts for the second image in detecting a color temperature of external light, ***Column 6, Lines 46-55)****;*

detecting a ratio of brightness between the flash light and external light using the first and second images (The ratio of (a/b) represents the first (first exposure with strobe) and second (second exposure without strobe) images and their ratio of

brightness (ratio of brightness of light with strobe and without strobe), ***Column 6, Lines 30-66)****; and*

mixing the color temperatures of the external light and the flash light on the basis of the ratio of brightness between the flash light and the external light (It is inherent that the color temperatures of the external light (when no strobe is used) and the flash light are mixed on the basis of the ratio a/b. The AWB control value, which is based on the color temperature ***(Column 2, Lines 15-16)****, is selected according to the value of a/b,* ***Column 6, Lines 58-66****. Therefore, the AWB control value accounts for a mix of the color temperatures)****.*

In regard to ***Claim 12****, Kitajima teaches of the method according to claim 11, wherein said mixing of the color temperatures includes mixing, when an exposure condition upon sensing the first image is different from that upon sensing the second image (The exposure conditions are different because in the first exposure, the strobe is used and the strobe is not used in the second exposure,* ***Column 6, Lines 30-45)****, the color temperatures by correcting a difference due to the exposure conditions (It is inherent that the color temperatures of the external light (when no strobe is used) and the flash light are mixed on the basis of the ratio a/b. The AWB control value, which is based on the color temperature* ***(Column 2, Lines 15-16)****, is selected according to the value of a/b. Therefore, the AWB control value accounts for a mix of the color temperatures and white balance control (correction) can be carried out on the basis of a more appropriate AWB control value,* ***Column 6, Lines 58-66)****.*

With regard to ***Claim 13****, Kitajima teaches of the method according to claim 11, wherein said mixing of the color temperatures includes mixing, when a sensitivity level of the image sensor upon sensing the first image is different from that of the image sensor upon sensing the second image, the color temperatures by correcting a sensitivity difference. It is inherent that spectral sensitivity is different when the strobe is on in the first exposure when compared to the second exposure when no light is emitted from the strobe. Therefore, by correcting the AWB control value, the sensitivity is also corrected.*

Regarding ***Claim 14****, Kitajima teaches of the method according to claim 11, wherein said mixing of the color temperatures includes mixing, when a spectral sensitivity level upon sensing the first image is different from that of the image sensor upon sensing the second image, the color temperatures by correcting a spectral sensitivity difference. It is inherent that spectral sensitivity is different when the strobe is on in the first exposure when compared to the second exposure when no light is emitted from the strobe. External light has a different spectral sensitivity than a strobe light. Therefore, by correcting the AWB control value, the difference in spectral sensitivities is also corrected.*

In regard to ***Claim 15****, Kitajima teaches of a controller for an image sensing apparatus, which has an image sensor* ***(Column 4, Lines 44-46)****, a flash light used to illuminate an object with light (Strobe 10 in* ***Figure 1)****, and an image sensing instruction unit/controller (the CPU 12 from* ***Figure 1)****, comprising:*

a first image sensing controller (CPU 12) which controls to sense a first image while causing the flash light to emit light in response to an image sensing designation by the image sensing instruction unit (The CPU 12 (image sensing controller) causes a strobe 10 to emit a flash of light for performing a first exposure in response to an object area to be photographed, ***Column 6, Lines 14 et seq.)****;*

a color temperature calculation unit (Color measuring sensor 9 and the CPU 12, ***Column 5, Lines 45-47)*** *which calculates a color temperature for processing the first image using at least color temperature information of the first image (Color temperature is used for processing the first image (image captured in first exposure) by the data processing section 6. The data processing section 6 corrects the color gain by the AWB control value for the strobe light for the object area (image) at which a strobe light is used,* ***Column 6, Lines 14 to 63****. The gain for each color signal is controlled according to the color temperature information,* ***Column 1, Lines 51-59)****.*

Regarding ***Claim 16****, Kitajima teaches of the controller according to claim 15, further comprising a determination unit which determines whether or not to sense an image using the flash light (The CPU 12 acts as a determination unit that decides (instructs) whether to sense an image using the strobe light (flash light) or not to sense an image using the strobe light (not emit light from strobe),* ***Column 6, Lines 24-32)****.*

With regard to ***Claim 17****, Kitajima teaches of the controller according to claim 16, further comprising a second image sensing controller which controls to store a second image obtained immediately before the emission of the flash light in a storage device (The CPU 12 instructs a performance of a second exposure (second capturing of*

image) when there is no emission being performed by the flashlight (strobe). The image data is stored in the frame memory 5, ***Column 6, Lines 25-33)****.*

wherein said color temperature calculation unit calculates a color temperature of the first image (image where strobe is used) is calculated using the first and second images (The calculation of the color temperature (AWB control value) of the first image (image where strobe is used) is calculated using the first and second images because the AWB control value is selected according to the ratio of the image data obtained in the first exposure versus the image data obtained during the second exposure (a/b). The ratio of the image with a strobe light and without a strobe light will yield the result of the color temperature of the first image which was captured using a strobe light, ***Column 6, Lines 46-63)****.*

In regard to ***Claim 18****, Kitajima teaches of the controller according to claim 17, wherein the second image is an image obtained before the emission of the flash light in response to the image sensing designation by the image sensing instruction unit (The second image is an image obtained without the emission of a strobe (flashlight),* ***Column 6, Lines 30-33*** *in response to an image sensing designation (area to be imaged) by the image sensing instruction unit (CPU 12). The CPU 12 determines how much light/no light needs to be emitted onto an object/area to be photographed,* ***Column 16, Lines 12 et seq.)***

Regarding ***Claim 19****, Kitajima teaches of the controller according to claim 17, wherein the second image is an image obtained before the emission of the flash light when determination unit determined to sense an image using the flash light (The*

second image (image data captured during the second exposure) is an image obtained when no strobe light is used. A determination to sense an image using a flash light was already made during the first exposure, ***Column 6, Lines 24-33)****.*

In regard to ***Claim 20****, Kitajima teaches of the controller according to claim 17, wherein said color temperature calculation unit includes a unit which detects a color temperature of external light using the second image* ***(****When no flash is used to detect a second image, the color measuring sensor 9 from Figure 1 detects a color temperature of the external light (when no strobe light is present, it is inherent that the color measuring sensor 9 detects the color temperature of external light))****.*

With regard to ***Claim 21****, Kitajima teaches of the controller according to claim 17, wherein said color temperature calculation unit includes a unit which detects a ratio of brightness between the flash light and external light using the second image* ***(****The ratio of image data (a/b) obtained when the strobe light (flash light) is emitted (a) to the image data obtained when the strobe light is not emitted (external light) (b) is used to calculate the color temperature value (AWB control value),* ***Column 6, Lines 46-63).***

In regard to ***Claim 22****, Kitajima teaches of the controller according to claim 15, further comprising a white balance correction unit which applies white balance correction corresponding to the calculated color temperature to the first image* ***(****AWB (Auto White Balance) control value is obtained on the basis of the color temperature,* ***Column 1, Lines 60 to 68****. The AWB control value which is obtained on the basis of the ratio comparison, is used to correct the color gain of the first by applying AWB processing,* ***Column 6, Lines 46-64).***

*Regarding **Claim 23**, Kitajima teaches of the controller according to claim 15, wherein said color temperature calculation unit includes a unit which calculates a color temperature of the flash light using the first image (The first image is taken into account in the ratio (a/b) which is used to calculate the color temperature of the strobe, **Column 6, Lines 30-64)**.*

*With regard to **Claim 24**, Kitajima teaches of the controller according to claim 15, wherein said color temperature calculation unit includes a unit which calculates a ratio of brightness between the flash light and external light using the first image (The CPU 12 judges (calculates) a ratio (a/b) of brightness between the flashlight (when a/b>1, the pixel is deemed to be in an area where the strobe light fully arrives) and an external light (when a/b is approximately equal to 1, the pixel is in an area at which the strobe light does not arrive). The first image (a) is used accounted for in the calculation, **Column 6, Lines 46-55)**.*

*In regard to **Claim 25**, Kitajima teaches of the controller according to claim 23, wherein said color temperature calculation unit comprises:*

*a unit (CPU 12) which detects a color temperature of external light using the second image (b in the ratio a/b accounts for the second image in detecting a color temperature of external light, **Column 6, Lines 46-55)**;*

a unit (CPU 12) which detects a ratio of brightness between the flash light and external light using the first and second images (The ratio of (a/b) represents the first (first exposure with strobe) and second (second exposure without strobe) images and

their ratio of brightness (ratio of brightness of light with strobe and without strobe), ***Column 6, Lines 30-66)****; and*

a unit (CPU 12) which mixes the color temperatures of the external light and the flash light on the basis of the ratio of brightness between the flash light and external light (It is inherent that the color temperatures of the external light (when no strobe is used) and the flash light are mixed on the basis of the ratio a/b. The AWB control value, which is based on the color temperature ***(Column 2, Lines 15-16)****, is selected according to the value of a/b,* ***Column 6, Lines 58-66****. Therefore, the AWB control value accounts for a mix of the color temperatures).*

Regarding ***Claim 26****, Kitajima teaches of the controller according to claim 25, wherein when an exposure condition upon sensing the first image is different from that upon sensing the second image (The exposure conditions are different because in the first exposure, the strobe is used and the strobe is not used in the second exposure,* ***Column 6, Lines 30-45)****, said mixing unit mixes the color temperatures by correcting a difference due to the exposure conditions (It is inherent that the color temperatures of the external light (when no strobe is used) and the flash light are mixed on the basis of the ratio a/b. The AWB control value, which is based on the color temperature* ***(Column 2, Lines 15-16)****, is selected according to the value of a/b. Therefore, the AWB control value accounts for a mix of the color temperatures and white balance control (correction) can be carried out on the basis of a more appropriate AWB control value,* ***Column 6, Lines 58-66)****.*

With regard to ***Claim 27****, Kitajima teaches of the controller according to claim 25, wherein when a sensitivity level of the image sensor upon sensing the first image is different from that of the image sensor upon sensing the second image, said mixing unit mixes the color temperatures by correcting a sensitivity difference It is inherent that spectral sensitivity is different when the strobe is on in the first exposure when compared to the second exposure when no light is emitted from the strobe. Therefore, by correcting the AWB control value, the sensitivity is also corrected.*

In regard to ***Claim 28****, Kitajima teaches of the controller according to claim 25, wherein when a spectral sensitivity level upon sensing the first image is different from that of the image sensor upon sensing the second image, said mixing unit mixes the color temperatures by correcting a spectral sensitivity difference It is inherent that spectral sensitivity is different when the strobe is on in the first exposure when compared to the second exposure when no light is emitted from the strobe. External light has a different spectral sensitivity than a strobe light. Therefore, by correcting the AWB control value, the difference in spectral sensitivities is also corrected.*

Regarding ***Claim 29****, Kitajima teaches of an image sensing apparatus including a controller of claim 15, (Figure 1).*

With regard to ***Claim 30****, Kitajima teaches of a storage medium (memory card 8) storing a program which has a program code for implementing a control method of claim 1, and can be executed by an information processing apparatus (The memory card 8 can be executed by an information processing apparatus, such as the camera from*

Figure 1. Data can be input from the memory card 8 into the camera to implement a control method in the CPU 12, ***Column 5, Lines 41-45)****.*

In regard to ***Claim 31****, Kitajima teaches of a storage medium storing a program, which can be executed by an information processing apparatus, that makes the information processing apparatus, which executes the program, function as a controller of claim 15 (The memory card 8 can be executed by an information processing apparatus, such as the camera from Figure 1. Data can be input from the memory card 8 into the camera to implement a control method in the CPU 12,* ***Column 5, Lines 41-45)****.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pritham Prabhakher whose telephone number is 571-270-1128. The examiner can normally be reached on M-F (7:30-5:00) Alt Friday's Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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